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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/670,978

09/26/2003

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ONS00459

8098

7590

12/17/2004

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EXAMINER

NGUYEN, LONG T

ART UNIT

PAPER NUMBER

2816

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/670,978

Applicant(s)

HALL, JEFFERSON W.

Examiner

Long Nguyen

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/26/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 5-8 are objected to because of the following informalities: In claim 5, it appears that the recitation "including coupling the drain of the enhancement mode transistor to a first signal" on line 1-3 needs to be deleted because it is already recited in claim 4.

Claims 6-8 are objected to because they include the informality of claim 5.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 5, the recitation "coupling the drain of the depletion mode transistor to a voltage return" on line 5-6 is indefinite because it is already recited that the drain of the depletion mode transistor is coupled to a second signal (see claim 4), so it cannot be determined whether the drain of the depletion mode transistor is coupled to the second signal or the voltage return. It appears that claim 5 should not be depended on claim 4, and it is suggested that to amend claim 5 to be depend on claim 1. Note that, if amended claim 5 to be depend on claim 1, then the recitation "including coupling the drain of the enhancement mode transistor to a first signal" on line 1-3 does not need to be deleted as suggested in the claim objection above. Clarification and/or appropriate correction is required.

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Claims 6-8 are indefinite because they include the indefiniteness of claim 5.

With respect to claim 9, the recitation “coupling the drain of the depletion mode transistor to a first signal” on line 1-3 is indefinite because it is already recited that the drain of the depletion mode transistor is coupled to a second signal (see claim 4), so it cannot be determined whether the drain of the depletion mode transistor is coupled to the second signal or the first signal. Further, “a first signal” in the above phrase is unclear antecedent basis since it is not clear whether it is the same as the “first signal” recited earlier (see claim 4). Further, the recitation “coupling the drain of the enhancement mode transistor to a voltage return” on line 6 is indefinite because it is already recited that the drain of the enhancement mode transistor is coupled to a first signal (see claim 4), so it cannot be determined whether the drain of the depletion mode transistor is coupled to the first signal or the voltage return. It appears that claim 9 should not be depend on claim 4, and it is suggested that to amend claim 5 to be depend on claim 1. Clarification and/or appropriate correction is required.

Claims 10-12 are indefinite because they include the indefiniteness of claim 5.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5, 7, 13-15, 19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Norman (USP 5,359,243).

With respect to claims 1-3, 13-15, 19 and 20, each of Figures 2 and 5 of the Norman reference discloses a circuit which includes: an enhancement mode transistor (210 in Figure 2, or the PMOS in 510 in Figure 5); and a depletion mode transistor (206 in Figure 2, or the depletion NMOS in 510 in Figure 5); wherein the absolute threshold voltage of the enhancement mode transistor is less than the absolute threshold voltage of the depletion mode transistor (Col. 3, lines 29-32). Note that the gate of the enhancement mode transistor is driven by a first signal (V_{in} , Figures 2 and 5) and the gate of the depletion mode transistor is driven by a second signal (204 in Figure 2, and the output of 500 in Figure 5); wherein the first and second signals are out of phase signals. Also note that the drain of the enhancement mode transistor coupled to a first signal (V_{out}) and the drain of the depletion mode transistor coupled to a second signal (V_{cc}).

Insofar as understood in claim 5, Figure 5 shows the enhancement mode transistor (PMOS in 510) having a drain coupled to first signal (V_{out}), a gate coupled to a gate of another enhancement mode transistor (NMOS in 500); the depletion mode transistor (depletion NMOS in 510) having a drain coupled to a voltage return (V_{cc}), a gate coupled to a gate and a drain of another depletion mode transistor (the depletion transistor in 500, note the gate of the depletion transistor in 510 coupled to the drain of the depletion transistor in 500 by way of the PMOS in 500) and to a drain of the another enhancement mode transistor (NMOS in 500); and the source of the another enhancement mode transistor (NMOS in 500) coupled to a voltage source (ground source).

Insofar as understood in claim 7, Figure 5 shows the source of the another depletion mode transistor (depletion NMOS in 500) coupled to the voltage return (V_{cc}).

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Allowable Subject Matter

6. Claims 6, 8-12 and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if rewritten to overcome the indefinite problems set forth above.


Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directly to Examiner Long Nguyen whose telephone number is (571) 272-1753. The Examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached at (571) 272-1740. The fax number for this group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Long Nguyen
Primary Examiner
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